Newborn Screening: Special Considerations

Special attention is needed when infants are transfused, administered intravenous nutrients (hyperalimentation), premature (less than 1500 grams at birth) or sick (requiring a hospital stay of three weeks or more). Below are the issues of concern and recommendations to assure that these children receive appropriate screening.

Transfusions & Hyperalimentation

The first newborn screening specimen should be obtained prior to blood transfusion or hyperalimentation whenever possible. If not, the specimen should be collected 24 hours after stopping hyperalimentation, or 24 hours after transfusion. Specimens collected following red blood cell transfusions will yield invalid results for galactosemia and hemoglobinopathy screening. In this event, galactosemia status and the hemoglobin phenotype can be determined after the transfused cells have cleared. A specimen collected four to six weeks after the last transfusion will resolve galactosemia disease status and the hemoglobin phenotype in most circumstances.

Premature & Sick Infants

Premature infants (birth weight under 1500 grams) and sick infants (requiring three or more weeks hospitalization) who have congenital hypothyroidism may have a delayed rise in thyroid stimulating hormone (TSH). This will yield negative screening results on the initial two specimens. Therefore, a third specimen is recommended for these infants. This specimen should be collected between four and six weeks of age or just prior to hospital discharge, whichever is sooner.

Summary - Timing of Newborn Screening Specimens

- A first specimen is mandatory and must be collected before discharge from the hospital or by 5 days of age if the infant remains in the hospital (WAC 246-650-020). This specimen should be obtained prior to any hyperalimentation or blood transfusion.
- A second specimen is recommended for all infants between 7 and 14 days of age.
- A third specimen should be collected for infants who are transfused before the first specimen, have a birth weight under 1500 grams, or require hospitalization longer than three weeks. This third specimen should be collected at 4-6 weeks of age or just prior to hospital discharge, whichever is sooner.
- A fourth specimen should be collected from infants who are transfused before the first specimen if there is reason to suspect abnormal hemoglobin or galactosemia status (such as family history or clinical symptoms). This fourth specimen should be collected about 120 days after the last transfusion.

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